TABLE 5. OUTLAYS FOR FEDERAL INFRASTRUCTURE PROGRAMS, 1995-2000
(In millions of nominal dollars)

	1995	1996	1997	1998	1999	2000	Total, 1996-2000
All Types							
President's Budget	47,223	46,162	45,901	45,212	44,625	43,588	225,487
CBO Baseline Without Inflation[a]	46,924	47,118	47,430	47,831	48,130	48,328	238,837
CBO Baseline Assuming Inflation[b]	46,924	47,727	49,124	50,882	52,718	54,586	255,037
Percentage Difference							
Without inflation	0.6	-2.0	-3.2	-5.5	-7.3	-9.8	-5.6
Assuming inflation	0.6	-3.3	-6.6	-11.1	-15.4	-20.1	-11.6
Surface Transportation[c]							
President's Budget	24,878	24,583	24,038	23,862	24,306	23,667	120,456
CBO Baseline Without Inflation[a]	24,822	25,474	25,696	25,852	25,965	26,034	129,022
CBO Baseline Assuming Inflation[b]	24,822	25,612	26,314	27,119	27,986	28,880	135,912
Percentage Difference							
Without inflation	0.2	-3.5	-6.5	-7.7	-6.4	-9.1	-6.6
Assuming inflation	0.2	-4.0	-8.7	-12.0	-13.2	-18.0	-11.4
Aviation							
President's Budget	10,132	9,945	10,091	9,876	9,298	9,083	48,293
CBO Baseline Without Inflation[a]	10,353	10,004	9,863	9,786	9,739	9,721	49,113
CBO Baseline Assuming Inflation[b]	10,353	10,253	10,425	10,701	11,037	11,432	53,848
Percentage Difference							
Without inflation	-2.1	-0.6	2.3	0.9	-4.5	-6.6	-1.7
Assuming inflation	-2.1	-3.0	-3.2	-7.7	-15.8	-20.5	-10.3
Water Transportation and Resources							
President's Budget	9,475	8,927	9,045	8,734	8,412	8,328	43,445
CBO Baseline Without Inflation[a]	9,086	8,718	8,676	8,647	8,659	8,801	43,501
CBO Baseline Assuming Inflation[b]	9,086	8,934	9,152	9,410	9,722	10,179	47,397
Percentage Difference							
Without inflation	4.3	2.4	4.2	1.0	-2.9	-5.4	-0.1
Assuming inflation	4.3	-0.1	-1.2	-7.2	-13.5	-18.2	-8.3

(Continued)

TABLE 5. CONTINUED

	1995	1996	1997	1998	1999	2000	Total, 1996-2000
Water Supply and Wastewater Treatment							
President's Budget	2,738	2,706	2,727	2,740	2,609	2,509	13,292
CBO Baseline Without Inflation[a]	2,663	2,921	3,195	3,546	3,768	3,771	17,200
CBO Baseline Assuming Inflation[b]	2,663	2,928	3,232	3,651	3,973	4,096	17,880
Percentage Difference							
Without inflation	2.8	-7.4	-14.6	-22.7	-30.7	-33.5	-22.7
Assuming inflation	2.8	-7.6	-15.6	-24.9	-34.3	-38.7	-25.7

SOURCE: Congressional Budget Office.

NOTE: Values for 1995 through 2000 are estimates.

a. Baseline assumes current law for mandatory spending and a freeze on all discretionary spending at 1995 levels.

b. Baseline assumes current law for mandatory spending and an annual increase in discretionary spending for inflation from 1995 levels.

c. Surface transportation encompasses spending for highways, mass transit, and rail.

billion, a cumulative decrease of $29.6 billion (or 11.6 percent) compared with baseline levels. The largest absolute reductions would occur in surface transportation--$15.5 billion over the five-year budget period. However, water supply and wastewater treatment would experience the largest percentage decrease--25.7 percent--compared with the baseline over the same five-year period.

Although budget authority is usually a good indicator of program direction, it does not properly measure proposals for changes in spending in many infrastructure programs; proposed changes in outlays must also be considered (see Box 1). In the case of most transportation programs, budget authority does not show true funding levels because those programs use contract authority, which is subject to obligation limits, instead of discretionary budget authority.

For example, a transportation program that contains $2 billion of contract authority (mandatory budget authority provided by authorizing committees in multi-year authorization bills) might have an obligation limit of $1.3 billion. The program would effectively be authorized to spend $1.3 billion, not $2 billion. If the President's

BOX 1.
COMPARING BUDGET AUTHORITY AND OUTLAYS

In most cases, budget authority is a more accurate indicator of changes in spending than are outlays because authority measures the resources that are committed in a given year. In contrast, outlays may reflect resources committed in previous years as well as those committed in the current year.

An analysis of changes in spending in infrastructure programs must take into account the method of appropriation. For a typical federal program, an authorization bill is first passed to show the intent of the funding, and an appropriation bill is then needed to give real spending authority. But a majority of infrastructure programs (mostly transportation) are funded differently. In programs such as Federal-Aid Highways, for example, spending authority is not derived from an appropriation bill but from the authorizing bill itself, in the form of contract authority. Annual obligation ceilings control the amount of contract authority that may be obligated in any one year. Increases in outlays for those programs are a direct result of increases in annual obligation ceilings rather than the level of budget authority.

budget called for $1.5 billion in authority for the program, with no change in the obligation limit, that proposal would not reduce the program--it would still be authorized to spend only $1.3 billion. However, the President's 1996 budget attempts to change that concept of contract authority by switching most transportation programs to the standard system of discretionary budget authority. Hence, if the President's proposal replaces the $2 billion of contract authority with $1 billion of discretionary budget authority, funding for that program would decline by $0.3 billion (the difference between the old obligation limit of $1.3 billion and the new funding level) and not by a full $1 billion. Therefore, discussion of budget authority for most transportation programs is inappropriate. Budget authority is relevant only in noncontract authority accounts such as water transportation and resources, and water supply, and wastewater treatment.

The President's 1996 budget proposal calls for $45.6 billion in budget authority for all federal infrastructure programs in 1996, a 9.4 percent decrease from the 1995

level (see Table 6). Compared with CBO's inflation-adjusted baseline projections for budget authority, the President's proposal for all federal infrastructure programs in 1996 would be 3.6 percent below baseline levels. The President's budget would decrease budget authority for water transportation, water resources, and water supply and wastewater treatment, with the last category losing the most. Budget authority for water supply and wastewater treatment would be 39.5 percent below baseline levels, a decrease of $7.9 billion over the five-year budget period.

Certainly, aggregate comparisons are useful for examining infrastructure trends. However, the components of the individual categories should also be analyzed in order to complete the spending picture.

The Unified Transportation Infrastructure Investment Program

The President's budget proposal for the Unified Transportation Infrastructure Investment Program would reorganize funding for highway, transit, rail, and aviation programs under the jurisdiction of the Department of Transportation. The purpose of the UTIIP is twofold. First, the Administration would consolidate transportation grants into a single account. Second, it would give the individual states greater latitude to make investment decisions.

This unified account, which would begin in 1996, would combine previous modal grant programs into state block grants and create state infrastructure banks and federally guided discretionary grants. It would also continue funding for Interstate and National Highway Systems, federal lands, transit full-funding grant agreements, airport letters of credit, the Washington Metropolitan Area Transit Authority, transit operating assistance, transportation research and development, Northeast Corridor improvement, Rhode Island rail development, Penn Station redevelopment, and subsidies for Amtrak.

The Administration separates the UTIIP account into two parts--federal programs and state and local initiatives. Although that distinction is vague (for example, Rhode Island rail development is categorized under state and local initiatives and redevelopment of Penn Station is categorized under direct federal programs), its purpose is clear--to give state and local governments greater stewardship over infrastructure investment. If the UTIIP was implemented in 1996, approximately 93 percent of the spending authority would be allocated to state programs. Moreover, approximately 91 percent of the funding would be designated for capital investment.

Overall, one can summarize the UTIIP proposal as a "block and cut" program. Although states would be given increased decisionmaking authority, federal funding for investment in transportation infrastructure would decline. An important feature

TABLE 6. BUDGET AUTHORITY FOR FEDERAL INFRASTRUCTURE PROGRAMS, 1995-2000
(In millions of nominal dollars)

	1995	1996	1997	1998	1999	2000	Total, 1996-2000
All Types							
President's Budget	50,302	45,550	46,999	45,570	42,487	41,552	222,158
CBO Baseline Without Inflation[a]	50,559	46,368	52,819	53,785	54,789	55,764	263,524
CBO Baseline Assuming Inflation[b]	50,559	47,235	54,538	56,414	58,350	60,309	276,845
Percentage Difference							
Without inflation	-0.5	-1.8	-11.04	-15.3	-22.57	-25.53	-15.7
Assuming inflation	-0.5	-3.6	-13.8	-19.2	-27.2	-31.1	-19.8
Surface Transportation[c]							
President's Budget	27,313	24,439	26,110	24,574	22,460	21,969	119,553
CBO Baseline Without Inflation[a]	27,784	23,358	29,687	30,506	31,355	32,233	147,138
CBO Baseline Assuming Inflation	27,784	23,473	29,922	30,870	31,851	32,866	148,982
Percentage Difference							
Without inflation	-1.7	4.6	-12.0	-19.4	-28.4	-31.8	-18.7
Assuming inflation	-1.7	4.1	-12.7	-20.4	-29.5	-33.2	-19.8
Aviation							
President's Budget	10,754	9,806	9,841	9,778	8,999	8,854	47,279
CBO Baseline Without Inflation[a]	10,766	10,823	10,898	10,979	11,063	11,150	54,913
CBO Baseline Assuming Inflation[b]	10,766	11,173	11,581	12,013	12,462	12,935	60,164
Percentage Difference							
Without inflation	-0.1	-9.4	-9.7	-10.9	-18.7	-20.6	-13.9
Assuming inflation	-0.1	-12.2	-15.0	-18.6	-27.8	-31.6	-21.4
Water Transportation and Resources							
President's Budget	8,563	8,819	8,629	8,830	8,519	8,463	43,261
CBO Baseline Without Inflation[a]	8,389	8,558	8,614	8,685	8,743	8,792	43,392
CBO Baseline Assuming Inflation[b]	8,389	8,847	9,181	9,548	9,910	10,281	47,767
Percentage Difference							
Without inflation	2.1	3.0	0.2	1.7	-2.6	-3.7	-0.3
Assuming inflation	2.1	-0.3	-6.0	-7.5	-14.0	-17.7	-9.4

(Continued)

TABLE 6. CONTINUED

	1995	1996	1997	1998	1999	2000	Total, 1996-2000
Water Supply and Wastewater Treatment							
President's Budget	3,673	2,485	2,419	2,388	2,509	2,265	12,065
CBO Baseline Without Inflation[a]	3,620	3,628	3,620	3,616	3,628	3,589	18,080
CBO Baseline Assuming Inflation[b]	3,620	3,742	3,855	3,983	4,127	4,226	19,932
Percentage Difference							
Without inflation	1.5	-31.5	-33.2	-34.0	-30.8	-36.9	-33.3
Assuming inflation	1.5	-33.6	-37.3	-40.1	-39.2	-46.4	-39.5

SOURCE: Congressional Budget Office.

NOTE: Values for 1995 through 2000 are estimates.

a. Baseline assumes current law for mandatory spending and a freeze on all discretionary spending at 1995 levels.

b. Baseline assumes current law for mandatory spending and an annual increase in discretionary spending for inflation from 1995 levels.

c. Surface transportation encompasses spending for highways, mass transit, and rail.

of the UTIIP, however, may be the Administration's attempt to change from using contract authority to discretionary budget authority. As mentioned above, the use of discretionary budget authority more accurately reflects the amount of money available to be obligated in a given year. In the UTIIP account, the President uses discretionary budget authority instead of contract authority, which more accurately reveals the intended funding levels for surface and air transportation programs.

Surface Transportation

The President's budget proposals would decrease outlays for surface transportation (highways, transit, and rail). In 1996, spending would be $24.6 billion, a decrease of 1.2 percent from the 1995 level of $24.9 billion. Outlays would continue to fall at an average annual rate of 1 percent through 2000, when they would represent 95 percent of the 1995 spending level.

Compared with the CBO baseline, outlays would be $1 billion (4 percent) below baseline levels in 1996. That gap would continue to widen over the budget period, leaving outlays $5.2 billion (18 percent) below the baseline by 2000. That amount would constitute a five-year cumulative decline of $15.5 billion (11.4 percent).

Over the 1996-2000 period, it is not possible to determine the spending distribution and cuts among highway, mass transit, and rail because they are only specified in general terms in the President's UTIIP proposal. However, a few declines in specific independent programs are worth noting. For example, the President's proposed budget authority for Amtrak operating expenses would be $420 million in 1996 and $220 million by 2000--a $200 million program cut. Amtrak capital spending would also fall-- from $230 million in 1996 to $100 million in 2000, a $130 million cut. Moreover, the Administration proposes to eliminate the Interstate Commerce Commission (ICC) after 1996. Many regulatory functions involving rail and motor carriers as well as payments for Directed Rail Service would be eliminated. The remaining functions would be transferred to the Departments of Transportation and Justice and to the Federal Trade Commission. The President's proposal would reduce total ICC outlays from $34.9 million in 1995 to $4 million in 1997--and none thereafter.

Aviation

The President's 1996 budget proposals would result in a decline in outlays for aviation. In 1996, outlays would fall to $9.9 billion from $10.1 billion in 1995--a 1.8 percent decrease. Outlays for aviation would continue to drop throughout the budget period, falling at an average annual rate of 2.2 percent. Compared with CBO's baseline, aviation spending would experience a five-year cumulative decline of $5.6 billion--or a 10.3 percent drop below baseline levels.

Why the downward shift in spending authority for aviation in the President's request versus the CBO baseline for the 1996-2000 period (a downward shift of $1.3 billion compared with the baseline in 1996 alone)? One explanation is that $2.2 billion in authority for grants-in-aid for airports would be removed from the budget in 1996. However, new budget authority added under the UTIIP account (state block grants, state infrastructure grants, and discretionary grants) would return $1.5 billion to $1.6 billion a year in budget authority (previously contract authority) to aviation. That $600 million to $700 million decline, in combination with unchanged spending in nominal terms for other large components of aviation spending, such as Federal Aviation Administration operations or facilities and equipment, helps to explain the $12.9 billion reduction in spending authority for aviation when compared with baseline levels.

Water Transportation and Resources

The President's budget for water transportation and resources would increase budget authority to $8.8 billion in 1996 from $8.6 billion in 1995. From 1997 to 2000, budget authority would remain almost constant, fluctuating by $200 million to $300

million each year. Compared with the CBO baseline, the President's proposed budget authority would be 9.4 percent lower for the 1996-2000 period.

Outlays would follow a similar pattern, peaking at $9 billion in 1997, and then falling 2.7 percent a year through 2000. Overall, outlays under the President's budget for the 1996-2000 period would be $3.6 billion--or 8.3 percent--below the CBO baseline.

Two accounts in water transportation and resources make up about 39 percent of the spending for this category. The largest component of water transportation and resources is expenses for Coast Guard operations, which in 1995 will account for $2.6 billion in budget authority and $2.5 billion in outlays. By the year 2000, funding for that account would be relatively unchanged, with both budget authority and outlays falling to a level of $2.4 billion.

The second largest component of this category is the Army Corps of Engineers' General Construction program, which accounts for roughly $1 billion a year in outlays. In the President's 1995 budget, spending for water resources would have declined slightly, since that budget proposed no new construction or major rehabilitation starts. In the 1996 budget, funding includes some new construction and major rehabilitation projects. However, the request decreases overall budget authority from the current 1995 level of $913 million to $848 million by 2000, and it cuts outlays from $1.1 billion in 1995 to $757 million in 2000. Because other accounts would remain relatively constant, spending authority for water transportation and resources would fall the least of any category over the budget period--funding levels for 2000 would be 98.8 percent of their 1995 levels.

Water Supply and Wastewater Treatment

Under the President's proposals, budget authority in 1996 would decline the most for water supply and wastewater treatment--from $3.7 billion in 1995 to $2.5 billion in 1996, a drop of 32.3 percent. Over the 1996-2000 period, budget authority for water supply and wastewater treatment would fall by $7.8 billion--or 39.5 percent below CBO's baseline levels. Furthermore, the President's requests relative to the CBO baseline would lower authority by more than 40 percent in two of the five budget years (40.1 percent in 1998 and 46.4 percent in 2000).

Spending for water supply and wastewater treatment would also fall over the budget period, though not as drastically. Under the President's plan, outlays would remain constant at $2.7 billion through 1998 and then drop at an average annual rate of 4.3 percent, ending at $2.5 billion in 2000. Compared with the CBO baseline, however, water supply and wastewater treatment would decline by a total of $4.5 billion over the 1996-2000 period--25.7 percent below baseline levels.

One reason that water supply and wastewater treatment would fall far below baseline levels is that $540 million to $590 million per year in spending authority for the Department of Agriculture's Rural Water and Waste Disposal Grants would be eliminated starting in 1996. That program would be combined with the department's Rural Development Performance Partnerships program, which would give state governments greater decisionmaking authority in setting goals for rural economic development. Since spending authority would not be specifically directed to water supply and treatment, cumulative cuts could total $2.8 billion over the 1996-2000 period.

COMPARING INFRASTRUCTURE SPENDING WITH THE FEDERAL BUDGET AND THE ECONOMY

Many analysts find it helpful to look at federal outlays for infrastructure relative to overall spending. Although that information provides a general yardstick for measuring the resources allocated to infrastructure, it by no means indicates what the appropriate level of spending should be.

In general, federal spending for infrastructure as a percentage of total federal spending has declined since the late 1970s (see Table 7). That percentage was largest in 1965 (6.27 percent), when capital investment was more than three times the level of noncapital investment. By 1994, federal spending was 3.10 percent of the total budget, with capital spending only a little more than twice noncapital spending. CBO estimates that federal investment in infrastructure will fall to 3.07 percent of the total federal budget in 1995 and to 2.86 percent in 1996, its lowest point since 1991.

Another comparison that analysts find useful is that between infrastructure spending and gross domestic product (see Figure 7).[10] Throughout the 1960s and 1970s, federal spending for infrastructure averaged 1 percent of GDP (see Table 8). In 1980, total federal spending for infrastructure was 1.17 percent of GDP, the highest it has ever been. Since 1980, that ratio declined steadily, reaching 0.67 percent in 1991. After a slight increase in 1992, it fell again from 1992 through 1995. In 1996, federal spending as a percentage of GDP is estimated to fall to 0.62 percent --its lowest level since 1957. In contrast, state and local spending as a percentage of GDP increased throughout the 1980s and was at its highest in two decades in 1991, reaching 2.11 percent (see Table 9).

10. For a more detailed discussion of the relative significance of infrastructure investment and GDP, in addition to historical data on the ratio of total public spending to GDP, see Congressional Budget Office, *Trends in Public Infrastructure Outlays*.

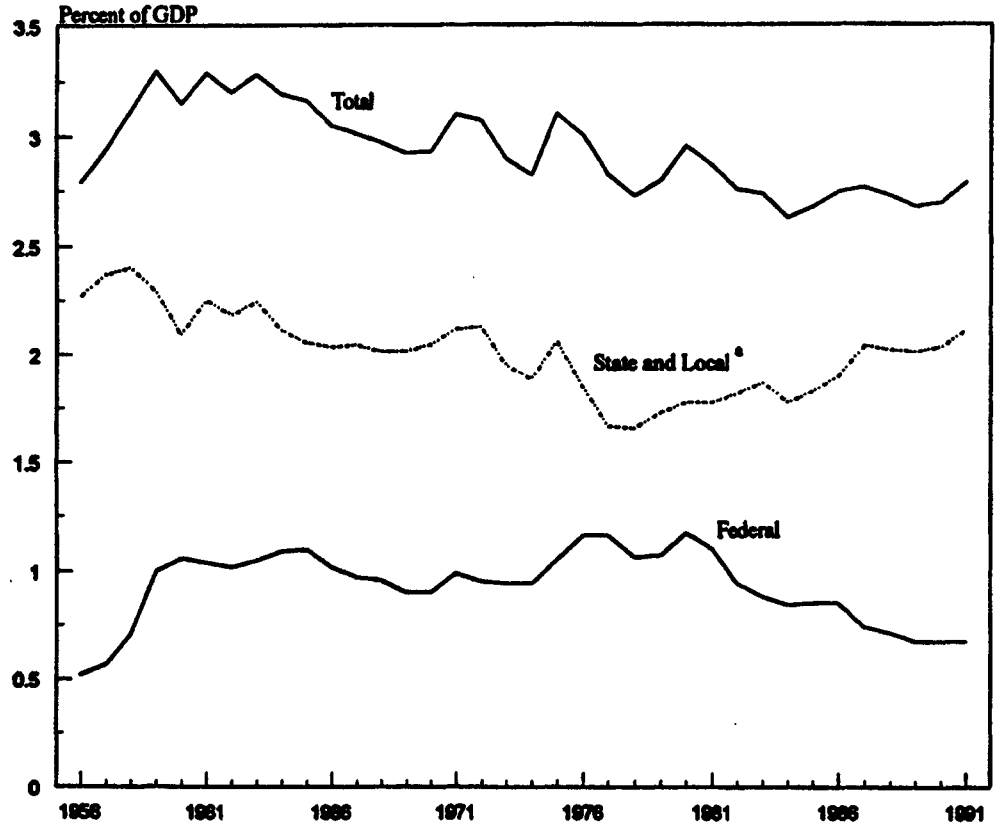
TABLE 7. FEDERAL SPENDING FOR INFRASTRUCTURE AS A PERCENTAGE OF ALL FEDERAL SPENDING, 1956-1996

Year	Total	Capital	Noncapital
1956	3.06	1.89	1.17
1957	3.27	2.19	1.08
1958	3.88	3.03	0.86
1959	5.24	4.01	1.22
1960	5.77	4.41	1.36
1961	5.49	4.06	1.42
1962	5.28	4.03	1.25
1963	5.49	4.15	1.34
1964	5.73	4.42	1.30
1965	6.27	4.76	1.51
1966	5.60	4.25	1.35
1967	4.91	3.69	1.22
1968	4.58	3.38	1.20
1969	4.55	3.27	1.28
1970	4.51	3.14	1.37
1971	4.96	3.38	1.58
1972	4.73	3.24	1.50
1973	4.89	3.30	1.59
1974	4.90	3.40	1.50
1975	4.75	3.20	1.55
1976	5.24	3.62	1.61
1977	5.43	3.81	1.62
1978	4.99	3.37	1.62
1979	5.18	3.61	1.57
1980	5.24	3.70	1.54
1981	4.79	3.05	1.74
1982	3.95	2.61	1.34
1983	3.59	2.41	1.18
1984	3.65	2.51	1.15
1985	3.55	2.50	1.05
1986	3.63	2.66	0.97
1987	3.27	2.30	0.98
1988	3.21	2.26	0.95
1989	3.02	2.07	0.94
1990	2.93	2.05	0.88
1991	2.89	2.02	0.87
1992	2.99	2.02	0.96
1993	3.00	2.06	0.94
1994	3.10	2.08	1.02
1995[a]	3.07	2.06	1.01
1996[a]	2.86	1.93	0.93

SOURCE: Congressional Budget Office.

a. Values for 1995 and 1996 are estimates.

FIGURE 7. PUBLIC SPENDING FOR INFRASTRUCTURE AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT, 1956-1991



SOURCE: Congressional Budget Office.

a. The amounts for state and local spending are net of federal grants and loans.

TABLE 8. FEDERAL SPENDING FOR INFRASTRUCTURE AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT, 1956-1996

Year	Total	Capital	Noncapital
1956	0.52	0.32	0.20
1957	0.57	0.38	0.19
1958	0.71	0.56	0.16
1959	1.00	0.77	0.23
1960	1.06	0.81	0.25
1961	1.04	0.77	0.27
1962	1.02	0.78	0.24
1963	1.05	0.79	0.26
1964	1.09	0.84	0.25
1965	1.10	0.84	0.27
1966	1.02	0.78	0.25
1967	0.97	0.73	0.24
1968	0.96	0.71	0.25
1969	0.90	0.65	0.25
1970	0.90	0.62	0.27
1971	0.99	0.68	0.32
1972	0.95	0.65	0.30
1973	0.94	0.64	0.31
1974	0.94	0.65	0.29
1975	1.05	0.71	0.34
1976	1.16	0.80	0.36
1977	1.16	0.81	0.35
1978	1.06	0.72	0.35
1979	1.07	0.75	0.32
1980	1.17	0.83	0.34
1981	1.10	0.70	0.40
1982	0.94	0.62	0.32
1983	0.88	0.59	0.29
1984	0.84	0.58	0.27
1985	0.85	0.60	0.25
1986	0.85	0.62	0.23
1987	0.74	0.52	0.22
1988	0.71	0.50	0.21
1989	0.67	0.46	0.21
1990	0.67	0.47	0.20
1991	0.67	0.47	0.20
1992	0.70	0.47	0.22
1993	0.68	0.46	0.21
1994	0.68	0.46	0.23
1995[a]	0.67	0.45	0.22
1996[a]	0.62	0.42	0.20

SOURCE: Congressional Budget Office.

a. Values for 1995 and 1996 are estimates.

TABLE 9. STATE AND LOCAL SPENDING FOR INFRASTRUCTURE, NET OF FEDERAL GRANTS AND LOANS, AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT, 1956-1991

Year	Total	Capital	Noncapital
1956	2.27	1.34	0.93
1957	2.37	1.38	0.99
1958	2.40	1.38	1.02
1959	2.29	1.27	1.02
1960	2.09	1.07	1.02
1961	2.25	1.18	1.07
1962	2.18	1.16	1.02
1963	2.24	1.18	1.05
1964	2.11	1.10	1.01
1965	2.05	1.06	0.99
1966	2.03	1.04	0.99
1967	2.04	1.05	0.98
1968	2.01	1.02	0.99
1969	2.01	1.03	0.98
1970	2.04	1.01	1.03
1971	2.11	1.05	1.06
1972	2.12	1.05	1.07
1973	1.94	0.91	1.03
1974	1.88	0.83	1.04
1975	2.05	0.92	1.14
1976	1.84	0.74	1.11
1977	1.66	0.53	1.13
1978	1.65	0.53	1.12
1979	1.72	0.60	1.12
1980	1.77	0.62	1.16
1981	1.77	0.60	1.17
1982	1.81	0.58	1.23
1983	1.86	0.58	1.28
1984	1.77	0.54	1.23
1985	1.82	0.58	1.24
1986	1.89	0.61	1.27
1987	2.03	0.73	1.29
1988	2.01	0.74	1.27
1989	2.00	0.74	1.26
1990	2.02	0.74	1.28
1991	2.11	0.78	1.32

SOURCE: Congressional Budget Office.

APPENDIX: SOURCES AND DEFINITIONS FOR INFRASTRUCTURE DATA

The Congressional Budget Office's infrastructure database lists total public outlays for 1956 through 1991 by type of infrastructure and type of spending. The database shows outlays by state and local governments for 1956 through 1991 and outlays by the federal government for 1956 through 1994. In addition, it provides estimates of federal spending for infrastructure for 1995. All of the data are available in both nominal dollars (Tables A-1 through A-6) and 1990 dollars (Tables A-7 through A-12).

Types of Infrastructure

Data are provided for eight types of infrastructure: highways, mass transit, rail, aviation, water transportation, water resources, water supply, and wastewater treatment. CBO has assigned the data on federal outlays to those categories based on federal budget functions and accounts. The general definitions are noted below.

- Highways. Spending for budget subfunction 401, except for outlays attributed to mass transit and rail, together with a Bureau of Indian Affairs road construction account. This spending consists primarily of outlays by the Federal Highway Administration and the National Highway Traffic Safety Administration.

- Mass Transit. Federal funding for the Federal Transit Administration and the Washington Metropolitan Area Transit Authority.

- Rail. Spending by the Federal Railroad Administration, the U.S. Railway Association, and certain Interstate Commerce Commission outlays.[1]

- Aviation. Spending for budget subfunction 402, including outlays for the Federal Aviation Administration and outlays by the National Aeronautics and Space Administration for general air transportation.

- Water Transportation. Spending for budget subfunction 403, which consists primarily of outlays by the Maritime Administration and the Coast Guard. Note that the data do not include navigation spending by the Army Corps of Engineers because all Corps spending comes under budget subfunction 301.

1. The Interstate Commerce Commission handles cases for both rail and motor carriers. Without information about the distribution of ICC spending, the ICC "Salaries and Expenses" account has been divided evenly between rail and highways. Other ICC spending is attributed to rail.

- Water Resources. Spending for budget subfunction 301, consisting primarily of outlays by the Army Corps of Engineers and the Bureau of Reclamation. Note that navigation outlays by the Army Corps of Engineers are included here rather than under water transportation.

- Water Supply. Water-related outlays by the Rural Water and Waste Disposal Grants and the Rural Development Insurance Fund (both are programs of the Farmers Home Administration) and the Water and Sewer Basic Grants program (in the Department of Housing and Urban Development).

- Wastewater Treatment. Environmental Protection Agency grants for the construction of municipal wastewater treatment plants, plus wastewater-related outlays of the three accounts in water supply.

All data on state and local expenditures are from similar categories in the Census Bureau's *Government Finances* series.

Types of Spending

Federal outlays are divided into a number of categories.[2] First, federal outlays are split between direct and indirect spending. Indirect federal spending includes grants and loans to state or local government entities; direct spending includes all other federal outlays. State and local outlays are shown as both including and excluding grants and loans from the federal government.

Federal outlays (both direct and indirect) and state and local outlays (both gross and net of federal grants) are further divided between capital and noncapital spending. Capital spending includes outlays for constructing and rehabilitating structures and for purchasing structures, major equipment, and land. All other outlays are considered noncapital spending.

Deflators

CBO's estimates of real infrastructure spending use separate deflators for federal and nonfederal spending and for capital and noncapital outlays. For 1956 through 1994, the deflators reflect the Bureau of Economic Analysis's benchmark revision of the national income and product accounts in December 1993 and the three-year revision of data (1991 through 1993) in July 1994. Thus, compared with the data presented

2. The federal government also supports public infrastructure investment by exempting from income tax the interest that states and localities pay on bonds issued to finance their infrastructure projects. CBO's data do not include the value to states and localities of this tax exemption.

in CBO's 1992 *Trends in Public Infrastructure* paper, the nominal dollar series (Tables A-1 through A-6) in this paper have not changed, but some of the constant dollar series (Tables A-7 through A-12) have been revised.

Direct federal capital outlays are adjusted for inflation with the variable-weighted deflator for federal nondefense purchases of structures and durable goods. Because that deflator is not available before 1972, CBO estimates its growth over the 1956-1971 period by using the rate of growth of the deflator for total federal purchases of durable goods and structures, which includes both defense and nondefense outlays. Both indirect federal capital outlays and all state and local capital outlays are adjusted for inflation by the variable-weighted deflator for state and local purchases of durable goods and structures.

Direct federal outlays for noncapital items are priced by using the variable-weighted deflator for federal nondefense purchases of services and nondurable goods (and excluding the inventory change of the Commodity Credit Corporation). Because that deflator is not available before 1972, CBO estimates its growth before then with the rate of growth of the deflator for total federal purchases of nondurable goods and services. CBO prices both indirect federal outlays and all state and local outlays for noncapital items by using the variable-weighted deflator for state and local government purchases of nondurable goods and services.

For 1995 through 2000, CBO's deflator estimates are based on continuing trends in each individual deflator relative to the gross domestic product deflator.

Sources for Data on Federal Spending

Most of the data for the 1980-1994 period have simply been assembled from an Office of Management and Budget (OMB) database that divides federal spending into the categories described above. The OMB database sorts spending into the appropriate categories at the subaccount level. In a few instances, the data conflict with those shown in various parts of the budget. In those cases, CBO used the data from the budget.

Data for 1995 through 2000 have been assembled from OMB data, unpublished CBO data, and the 1996 budget. They have been sorted into the same categories as the pre-1995 data, thus making the series comparable from 1956 through 2000.

Data for years before 1980 come primarily from unpublished OMB historical data and from the budget for various years. OMB's historical data show federal spending for individual budget accounts broken down into grant and nongrant spending. By definition, grant outlays are indirect spending; nongrant outlays can be either direct or indirect.

The historical data do not separate outlays into capital and noncapital expenditures. The data on capital expenditures were taken from the *Budget of the United States Government*, in particular the "Historical Tables," the "Special Analyses," and the "Appendix" for various years. Because of apparent inconsistencies in the principal data sources, spending data for both the aviation and the rail categories were taken from the federal budget's appendix and classified by type of spending on an account-by-account basis.

Caveats About the Federal Data

The data on federal spending include all programs whose primary purpose is to provide infrastructure services. During the 1970s and early 1980s, however, a significant fraction of total federal outlays for infrastructure were channeled through programs that included public works investment as only one of many purposes. Those multipurpose programs included General Revenue Sharing, Community Development Block Grants, the Economic Development Administration, the Appalachian Regional Commission, the Model Cities program, and others. Little information exists on the extent to which those programs supported infrastructure services of different types.

Caveats About the State and Local Data

The Bureau of the Census data for state and local infrastructure spending often combine mass transit and rail spending. The bureau compiles passenger rail data under mass transit, but it does not directly account for freight rail. The amount of that public spending is small, however, as much of the state and local spending arises from matching grants, tax incentives, and private sources.

Making Fiscal Years Conform

Most state and local governments use fiscal years that start on July 1.[3] The federal fiscal year started on the same date through fiscal year 1976. That fiscal year was followed by a "transition quarter," after which the federal fiscal year began on October 1. The mismatch between fiscal years creates a small error in measuring state and local spending net of federal grants for any specific year. To make state and local data more comparable with federal outlays, the state and local data for all years after 1976 have been adjusted to reflect federal fiscal years. The adjustment assigns 25 percent of the spending in each state and local fiscal year to the preceding federal

3. For details, see Bureau of the Census, *Government Finances: 1989-1990* (December 1991), p. viii.

fiscal year. For example, 25 percent of state and local outlays for state and local fiscal year 1990 are assumed to occur in federal fiscal year 1989, with the remainder of state and local outlays assumed to fall in federal fiscal year 1990. That procedure will reduce errors caused by the inexact match between the two types of fiscal years.

TABLE A-1. INFRASTRUCTURE SPENDING BY FEDERAL, STATE, AND LOCAL GOVERNMENTS, 1956-1991 (In millions of nominal dollars)

	1956	1957	1958	1959
All Categories	11,600	12,890	13,960	15,825
Capital	6,898	7,742	8,673	9,793
Other	4,702	5,149	5,288	6,032
Highways	6,999	7,857	8,577	9,609
Capital	4,654	5,211	5,761	6,641
Other	2,345	2,646	2,816	2,968
Mass Transit	580	596	628	647
Capital	109	120	134	102
Other	471	476	494	545
Rail	8	11	14	13
Capital	0	0	0	0
Other	8	11	14	13
Aviation	334	431	548	748
Capital	129	192	307	337
Other	205	239	241	411
Water Transportation[a]	620	552	611	677
Capital	143	173	251	209
Other	477	379	360	468
Water Resources[a]	898	1,102	1,178	1,521
Capital	562	653	809	918
Other	336	449	369	603
Water Supply	1,327	1,436	1,472	1,600
Capital	712	748	761	878
Other	615	688	711	722
Wastewater Treatment	835	906	933	1,011
Capital	589	644	649	708
Other	246	262	284	303

(Continued)

TABLE A-1. TOTAL PUBLIC SPENDING (In millions of nominal dollars)
CONTINUED

	1960	1961	1962	1963
All Categories	15,879	17,008	17,763	19,191
Capital	9,464	10,082	10,753	11,535
Other	6,415	6,926	7,010	7,656
Highways	9,460	9,867	10,422	11,220
Capital	6,340	6,476	6,998	7,521
Other	3,120	3,391	3,424	3,699
Mass Transit	683	688	704	820
Capital	94	120	90	162
Other	589	568	614	658
Rail	10	11	26	12
Capital	0	0	0	0
Other	10	11	26	12
Aviation	856	1,081	1,133	1,159
Capital	356	467	416	356
Other	500	614	718	802
Water Transportation[a]	744	862	908	941
Capital	193	297	366	343
Other	551	565	542	599
Water Resources[a]	1,342	1,505	1,445	1,643
Capital	871	1,006	1,084	1,229
Other	471	499	361	414
Water Supply	1,681	1,892	1,852	1,932
Capital	843	990	913	905
Other	838	902	939	1,027
Wastewater Treatment	1,103	1,103	1,272	1,464
Capital	767	726	886	1,019
Other	336	377	386	445

(Continued)

TABLE A-1. TOTAL PUBLIC SPENDING (In millions of nominal dollars) CONTINUED

	1964	1965	1966	1967
All Categories	19,966	21,181	22,459	23,882
Capital	12,093	12,728	13,363	14,148
Other	7,873	8,453	9,095	9,735
Highways	11,730	12,300	12,813	13,974
Capital	7,974	8,342	8,617	9,460
Other	3,756	3,958	4,196	4,514
Mass Transit	873	1,043	1,029	1,197
Capital	155	242	216	324
Other	718	801	813	873
Rail	15	29	26	41
Capital	0	0	0	0
Other	15	29	26	41
Aviation	1,175	1,286	1,332	1,443
Capital	322	343	322	351
Other	854	942	1,010	1,092
Water Transportation[a]	935	993	1,012	1,068
Capital	311	303	346	359
Other	625	689	666	708
Water Resources[a]	1,721	1,737	2,128	2,239
Capital	1,289	1,253	1,449	1,530
Other	432	485	679	709
Water Supply	2,001	2,227	2,411	2,286
Capital	948	1,138	1,211	1,055
Other	1,053	1,089	1,200	1,231
Wastewater Treatment	1,515	1,567	1,707	1,635
Capital	1,095	1,107	1,202	1,069
Other	420	460	505	566

(Continued)

TABLE A-1. TOTAL PUBLIC SPENDING (In millions of nominal dollars) CONTINUED

	1968	1969	1970	1971
All Categories	25,194	27,009	28,878	32,601
Capital	14,662	15,563	16,078	18,099
Other	10,532	11,446	12,800	14,502
Highways	14,584	15,542	16,571	18,264
Capital	9,731	10,292	10,780	11,906
Other	4,852	5,250	5,791	6,358
Mass Transit	1,453	1,633	1,623	1,892
Capital	443	559	366	446
Other	1,010	1,074	1,257	1,446
Rail	28	29	30	119
Capital	0	0	0	0
Other	28	29	30	119
Aviation	1,523	1,824	2,294	2,807
Capital	386	569	804	898
Other	1,137	1,255	1,490	1,909
Water Transportation[a]	1,246	1,317	1,339	1,530
Capital	478	482	425	502
Other	768	836	914	1,028
Water Resources[a]	2,211	2,105	2,034	2,336
Capital	1,420	1,230	1,117	1,357
Other	792	875	917	979
Water Supply	2,417	2,665	2,821	3,007
Capital	1,097	1,225	1,201	1,247
Other	1,320	1,440	1,620	1,760
Wastewater Treatment	1,732	1,895	2,167	2,646
Capital	1,107	1,207	1,385	1,744
Other	625	688	782	902

(Continued)

TABLE A-1. TOTAL PUBLIC SPENDING (In millions of nominal dollars) CONTINUED

	1972	1973	1974	1975
All Categories	35,283	36,782	39,531	46,763
Capital	19,568	19,705	20,835	24,484
Other	15,715	17,077	18,696	22,279
Highways	19,226	18,811	20,195	22,847
Capital	12,367	11,500	12,210	13,712
Other	6,859	7,312	7,986	9,135
Mass Transit	2,195	2,814	3,031	4,003
Capital	495	920	926	1,203
Other	1,700	1,894	2,105	2,800
Rail	152	187	243	929
Capital	0	0	47	205
Other	152	187	196	724
Aviation	3,079	3,346	3,274	3,544
Capital	1,141	1,343	1,036	1,094
Other	1,939	2,003	2,238	2,451
Water Transportation[a]	1,615	1,807	1,937	2,166
Capital	523	623	682	757
Other	1,092	1,184	1,254	1,409
Water Resources[a]	2,478	2,659	2,688	3,214
Capital	1,482	1,456	1,551	1,834
Other	997	1,203	1,137	1,380
Water Supply	3,278	3,555	4,083	4,797
Capital	1,358	1,435	1,743	2,111
Other	1,920	2,120	2,340	2,686
Wastewater Treatment	3,259	3,604	4,080	5,262
Capital	2,202	2,428	2,640	3,569
Other	1,057	1,176	1,440	1,693

(Continued)

TABLE A-1. TOTAL PUBLIC SPENDING (In millions of nominal dollars) CONTINUED

	1976	TQ[b]	1977	1978
All Categories	50,543	13,069	54,066	58,527
Capital	25,924	6,231	25,678	26,906
Other	24,619	6,839	28,387	31,621
Highways	24,235	5,880	23,691	25,923
Capital	14,271	3,159	12,705	13,641
Other	9,964	2,721	10,987	12,281
Mass Transit	4,272	1,346	5,445	5,618
Capital	1,339	420	1,613	1,460
Other	2,933	925	3,832	4,158
Rail	1,460	211	1,895	1,938
Capital	568	27	931	848
Other	891	184	964	1,090
Aviation	3,763	890	3,866	4,369
Capital	1,029	203	868	1,072
Other	2,735	686	2,998	3,297
Water Transportation[a]	2,241	604	2,491	2,607
Capital	653	161	672	741
Other	1,588	443	1,819	1,867
Water Resources[a]	3,414	978	3,893	4,193
Capital	1,901	584	2,233	2,183
Other	1,513	394	1,660	2,009
Water Supply	5,220	1,399	5,711	6,323
Capital	2,208	512	2,071	2,281
Other	3,012	887	3,640	4,042
Wastewater Treatment	5,937	1,763	7,074	7,556
Capital	3,955	1,165	4,587	4,679
Other	1,982	598	2,488	2,877

(Continued)

TABLE A-1. TOTAL PUBLIC SPENDING (In millions of nominal dollars) CONTINUED

	1979	1980	1981	1982
All Categories	67,851	77,907	84,831	85,842
Capital	32,684	38,229	38,499	37,548
Other	35,167	39,678	46,332	48,294
Highways	30,014	34,035	34,967	35,409
Capital	16,529	19,264	19,118	18,338
Other	13,484	14,771	15,850	17,071
Mass Transit	6,529	7,924	9,791	11,316
Capital	1,694	2,095	2,731	3,208
Other	4,835	5,829	7,061	8,109
Rail	2,059	2,405	3,715	2,154
Capital	1,155	1,246	451	521
Other	904	1,158	3,265	1,633
Aviation	4,853	5,693	6,118	6,089
Capital	1,317	1,720	1,760	1,742
Other	3,536	3,973	4,358	4,347
Water Transportation[a]	3,040	3,480	3,856	4,082
Capital	947	1,199	1,288	1,188
Other	2,093	2,281	2,568	2,893
Water Resources[a]	4,901	5,656	5,728	5,539
Capital	2,400	2,827	2,728	2,936
Other	2,502	2,830	3,000	2,603
Water Supply	7,386	8,515	9,613	10,339
Capital	2,860	3,447	3,760	3,722
Other	4,526	5,068	5,853	6,617
Wastewater Treatment	9,070	10,200	11,042	10,914
Capital	5,782	6,432	6,664	5,893
Other	3,287	3,768	4,378	5,021

(Continued)

TABLE A-1. TOTAL PUBLIC SPENDING (In millions of nominal dollars) CONTINUED

	1983	1984	1985	1986
All Categories	90,677	96,628	105,841	115,476
Capital	38,734	41,250	46,481	52,142
Other	51,943	55,378	59,361	63,334
Highways	37,679	41,112	46,363	50,369
Capital	19,083	21,200	24,634	27,181
Other	18,595	19,912	21,728	23,188
Mass Transit	12,560	13,260	13,852	14,697
Capital	3,679	3,863	3,830	3,904
Other	8,881	9,397	10,021	10,793
Rail	1,342	1,558	1,072	908
Capital	426	433	336	136
Other	916	1,125	736	772
Aviation	6,704	7,346	7,979	8,846
Capital	1,888	2,183	2,454	3,101
Other	4,816	5,163	5,524	5,744
Water Transportation[a]	4,390	4,370	4,740	5,672
Capital	1,296	1,161	1,514	2,559
Other	3,093	3,209	3,226	3,112
Water Resources[a]	5,749	5,992	6,451	6,628
Capital	2,865	3,063	3,249	3,233
Other	2,884	2,929	3,202	3,395
Water Supply	10,946	11,308	12,919	14,660
Capital	3,725	3,618	4,403	5,355
Other	7,221	7,689	8,516	9,305
Wastewater Treatment	11,308	11,683	12,466	13,696
Capital	5,771	5,729	6,060	6,672
Other	5,538	5,954	6,407	7,024

(Continued)

TABLE A-1. TOTAL PUBLIC SPENDING (In millions of nominal dollars) CONTINUED

	1987	1988	1989	1990	1991
All Categories	123,073	130,889	138,051	147,594	157,733
Capital	55,733	59,722	62,029	66,292	71,103
Other	67,340	71,168	76,022	81,302	86,630
Highways	53,439	56,571	59,104	62,437	66,295
Capital	29,125	31,927	33,047	34,532	36,957
Other	24,315	24,645	26,057	27,904	29,338
Mass Transit	15,562	16,293	17,142	18,522	20,327
Capital	4,095	4,106	4,683	5,491	5,817
Other	11,467	12,187	12,459	13,031	14,510
Rail	829	598	623	558	807
Capital	148	0	-6	-48	228
Other	681	598	629	606	579
Aviation	9,598	10,523	11,423	12,685	14,098
Capital	3,604	4,065	4,204	4,913	5,644
Other	5,993	6,458	7,219	7,772	8,454
Water Transportation[a]	5,207	4,942	4,823	5,114	5,178
Capital	1,721	1,349	1,064	1,210	1,255
Other	3,486	3,593	3,759	3,904	3,924
Water Resources[a]	7,103	8,699	9,440	10,107	10,115
Capital	3,457	3,833	4,194	4,622	4,339
Other	3,645	4,866	5,247	5,485	5,776
Water Supply	16,106	16,757	18,140	19,520	20,866
Capital	6,028	6,132	6,497	7,029	7,658
Other	10,078	10,625	11,642	12,491	13,208
Wastewater Treatment	15,228	16,506	17,356	18,650	20,048
Capital	7,555	8,311	8,346	8,543	9,206
Other	7,674	8,195	9,010	10,107	10,842

SOURCE: Congressional Budget Office.

a. Navigation outlays by the Army Corps of Engineers are included in water resources rather than in water transportation.
b. Transition quarter.

TABLE A-2. TOTAL FEDERAL SPENDING FOR INFRASTRUCTURE, 1956-1995
(In millions of nominal dollars)

	1956	1957	1958	1959	1960	1961
All Categories	2,161	2,508	3,200	4,823	5,324	5,361
Capital	1,338	1,680	2,493	3,697	4,066	3,969
Other	823	828	707	1,125	1,258	1,391
Highways	776	995	1,528	2,630	2,973	2,645
Capital	729	950	1,511	2,601	2,927	2,610
Other	47	45	17	29	46	35
Mass Transit	0	0	0	0	0	0
Capital	0	0	0	0	0	0
Other	0	0	0	0	0	0
Rail	8	11	14	13	10	11
Capital	0	0	0	0	0	0
Other	8	11	14	13	10	11
Aviation	180	220	316	497	571	724
Capital	27	45	96	164	170	218
Other	153	175	220	333	401	506
Water Transportation[a]	420	365	392	436	508	569
Capital	37	66	113	56	57	104
Other	383	299	279	380	451	465
Water Resources[a]	777	916	931	1,211	1,222	1,368
Capital	545	616	754	840	872	993
Other	232	299	177	371	350	374
Water Supply	0	0	0	0	0	0
Capital	0	0	0	0	0	0
Other	0	0	0	0	0	0
Wastewater Treatment	0	3	19	36	40	44
Capital	0	3	19	36	40	44
Other	0	0	0	0	0	0

(Continued)

TABLE A-2. TOTAL FEDERAL SPENDING (In millions of nominal dollars) CONTINUED

	1962	1963	1964	1965	1966	1967
All Categories	5,641	6,113	6,786	7,411	7,532	7,733
Capital	4,307	4,619	5,242	5,629	5,712	5,805
Other	1,335	1,494	1,544	1,782	1,821	1,928
Highways	2,848	3,093	3,710	4,096	4,044	4,069
Capital	2,789	3,026	3,641	4,016	3,998	4,000
Other	59	66	69	81	46	70
Mass Transit	1	4	6	12	21	45
Capital	c	2	5	11	16	42
Other	1	2	1	1	5	3
Rail	26	12	15	29	26	41
Capital	0	0	0	0	0	0
Other	26	12	15	29	26	41
Aviation	818	851	882	941	961	1,042
Capital	221	185	169	153	119	127
Other	598	666	713	788	842	915
Water Transportation[a]	617	655	646	717	695	749
Capital	181	151	138	144	153	175
Other	435	504	508	573	541	574
Water Resources[a]	1,290	1,447	1,460	1,546	1,704	1,685
Capital	1,074	1,203	1,223	1,235	1,344	1,360
Other	216	244	238	310	360	325
Water Supply	0	0	0	0	c	13
Capital	0	0	0	0	c	13
Other	0	0	0	0	0	0
Wastewater Treatment	42	52	66	70	82	89
Capital	42	52	66	70	82	89
Other	0	0	0	0	0	0

(Continued)